Discussion

The method of assessment is a comparative one and since this injury is confined to one digit it is possible to compare normal sympathetically blocked digits with the reimplanted thumb. The tourniquet time of two hours was a result of an alteration in surgical technique so that the orthopaedic procedure was carried out before the vascular one. A tourniquet time of 15 minutes would normally be adequate for drug fixation. Guanethidine sympathetic blockade is simple and provides a continuous protection against vasospasm with increased blood flow for periods of up to ten days.

I am indebted to Dr D Wallace (anaesthetist) and Dr F Williams (plastic surgeon) for their helpful criticism and co-operation.

[1] Hwa, W, *Acta Medica Philippina*, 1967, **3**, 221.
[2] Komatsu, S, and Tamai, S, *Plastic and Reconstrucitve Surgery*, 1968, **42**, 374.
[3] Lendvay, P G, *British Journal of Plastic Surgery*, 1973, **26**, 398.
[4] Hannington-Kiff, J G, *Lancet*, 1974, **1**, 1019.

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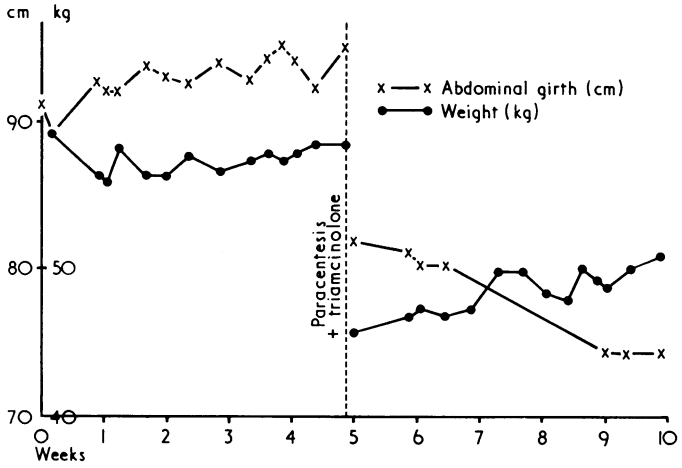
Idiopathic ascites of haemodialysis: response to treatment

Refractory ascites has recently been described as a serious complication in patients receiving chronic haemodialysis and is commonly associated with a poor outcome.[1 2] Its pathogenesis is unknown and treatment unsatisfactory. The therapeutic manoeuvres that have been tried without success include rigid fluid control, increased dialysis, steroids, retransfusion of ascitic fluid, albumin infusion, high-protein diet, and the use of a peritoneoatrial pump.[1-4] This case report suggests that abdominal paracentesis followed by intraperitoneal steroid instillation may be effective in inducing a prolonged remission in this condition, as reported by Buselmeier *et al.*[5]

Case report

A 33-year-old woman was diagnosed as having end-stage renal failure due to hypocomplementaemic mesangiocapillary glomerulonephritis with partial lipodystrophy in August 1972. Successful renal transplantation was carried out on 22 November 1972, after which she was discharged from hospital with a serum creatinine concentration of 0·28 mmol/l (3·2 mg/100 ml). Recurrent glomerulonephritis developed in the allograft and this led to a transplant nephrectomy on 12 March 1974. She was returned to chronic haemodialysis, and in September 1974 severe progressive ascites developed which could not be controlled by ultrafiltration during dialysis. The ascitic fluid had protein and electrolyte compositions identical to plasma. Serum albumin, however, was never less than 3 g/l. Culture of the ascitic fluid was sterile for acid fast bacilli, fungi, and bacterial pathogens and no malignant cells were seen on microscopy.

She had no signs of cardiac failure and cardiac assessment, including cardiac catheterisation, did not show any pericardial constriction. Although an isotope scan showed non-specific mild hepatosplenomegaly, there was no clinical or biochemical evidence of chronic liver disease. Portal vein pressure was not measured. The patient was considered to have the idiopathic ascites of haemodialysis. On 22 May 1975 13 litres of ascitic fluid were drained and 200 mg of triamcinolone acetonide were instilled into the peritoneal cavity. The predialysis weight, abdominal girth, and physical appearance showed a striking improvement (see fig). Five months after treatment there has been no recurrence of ascites and no apparent side effects.



Abdominal girth and body weight before and after treatment

Discussion

This case illustrates a dramatic remission of a troublesome complication of haemodialysis by the use of the intraperitoneal steroids. Abnormal capillary permeability secondary to a uraemic toxin may be the basic mechanism responsible for the development of ascites. This is supported by the facts that the common causes of ascites are invariably absent; peritoneal histology is often normal or only mildly abnormal[3 4]; and cure has been reported to succeed transplantation.[3 4] The effectiveness of intraperitoneal steroids may relate to their ability to reduce capillary permeability.

The help of Miss K Wright in typing the manuscript is greatly appreciated.

[1] Gutch, C F, American Society of Nephrology, 4th meeting, p 30, 1971.
[2] Mahoney, J F, Gutch, C F, and Holmes, J H, American Society of Nephrology, 3rd meeting, p 51, 1970.
[3] Singh, S, Mitra, S, and Berman, L, *Nephron*, 1974, **12**, 114.
[4] Wang, F, *et al*, *Nephron*, 1974, **12**, 105.
[5] Buselmeier, T J, *et al*, *Abstracts ASAIO*, 1975, **4**, 7.

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Some economies in an NHS postal laboratory service

During 1975 this laboratory received about 200 000 specimens, of which some 25 000 were urine sent by post for bacteriological examination. The universal containers originally used were glass, each containing 0·5 g powdered boric acid.[1] To reduce postal charges these were replaced by 28 ml sterile plastic disposable containers with the same boric acid content. Two substantial increases in postal rates then compelled us to review the weights of all our prepaid postal packages. The standard kit for pregnancy tests had already been reduced to a 7 ml sterile disposable plastic container with a saving on postage of about £70 for every 1000 such tests.

Methods and results

Only a little well-mixed urine is needed for bacteriological examination. A standard-volume loop charged with urine is plated out, the resultant colonies are counted, and the bacterial count per ml is estimated. The result is interpreted according to the recommendations of Kass.[2] Is it necessary, therefore, to request 28 ml when perhaps 7 ml would do? Accordingly, 28 ml and 7 ml sterile disposable plastic containers with appropriate boric acid contents were prepared and sent to three practices in the Grampian area. With the co-operation of the doctors concerned, the containers were filled with a sample of each urine specimen to be examined and returned to

Cost of postal specimen kits (towards end of 1975 and exclusive of VAT)

Postal kit	Cost per 1000 kits (£)		
	Kit	Postage	Total
Dip spoon	100	230	330
Dip slide	92·50	230	322·50
28 ml boric acid	25	230	255
7 ml boric acid	14	170	184

the laboratory in the same envelope. Examination of over 300 of these double specimens showed no difference in content of albumin, sugar, red and white blood cells, casts, and bacteria. The 7 ml container, with 0·125±0·01 g powdered boric acid, therefore replaced the 28 ml container. Our staff prepare all the postal kits, measuring the powdered boric acid in a special "thimble." Comparison of our "home-made" kits with commercially available dip slide and dip spoon kits for gauging bacterial content (table) shows our 7 ml boric acid kit to be the most economical. Since the laboratory handles some 25 000 boric acid urine postal specimens a year the substitution of the 7 ml container for the 28 ml container achieves a yearly saving of £1775. If the 7 ml kit had been used to replace dip slide or dip spoon kits the yearly saving would have been £3462 or £3650.

The introduction in our laboratory of the economical urine culture procedure using a calibrated 1 μl loop to inoculate each of the 50 segments of a 10 in (25·4 cm) square glass and metal dish filled with 200 ml of appropriate medium[3] brought further savings in sterile disposable plastic Petri dishes and media. For every 1000 specimens so examined the costs of Petri dishes and media were decreased by £15 and £11 respectively. Given a yearly intake of 25 000 postal urine specimens the total saving is £650.

These economies achieve yearly savings of £450 on pregnancy tests kits, at least £1775 on urine outfits, and £650 on Petri dishes and media—a total of £2875 a year.

Comment

The need for more intensive and frugal use of existing resources within the NHS has been emphasised.[4] The economies described here may be made without detriment to patient care. The £2875 saved is but a drop in the ocean of NHS expenditure, but it does indicate that economies are possible if day-to-day running costs are carefully watched.

[1] Porter, I A, and Brodie, J, *British Medical Journal*, 1969, **2**, 353.
[2] Kass, E H, *Transactions of the Association of American Physicians*, 1956, **69**, 56.
[3] Ramsden, C H, *Gazette of the Institute of Medical Laboratory Technology*, 1974, **18**, 149.
[4] *British Medical Journal*, 1975, **4**, 723.

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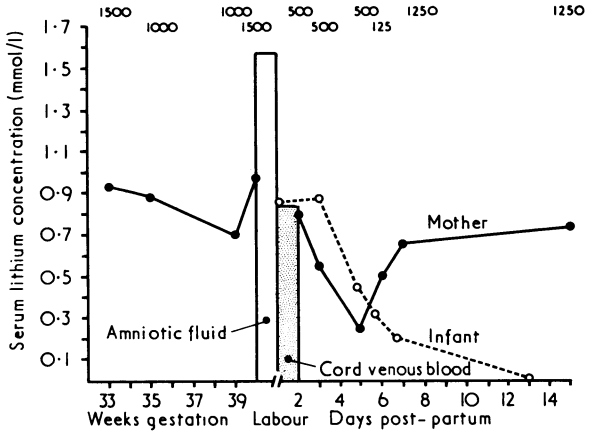
Labour on lithium

Pharmacological nihilism is the safest approach to pregnancy but poses a problem in the prophylaxis or treatment of chronic maternal illness such as manic depressive psychosis. The current view is that conception while on lithium is not an indication for therapeutic termination of pregnancy but there exists conflicting evidence for teratogenicity[1 2] and little information about the transplacental pharmacokinetics of lithium in humans. We report the detailed study of a single pregnancy throughout the second and third trimesters of which oral lithium carbonate treatment was maintained.

Case report

A 24-year-old unmarried girl was admitted to the MRC Brain Metabolism Unit in the hypomanic phase of a manic-depressive psychosis. On discovering pregnancy we deferred specific chemotherapeutic plans for the first trimester of pregnancy for fear of teratogenicity. When necessary, sedation was achieved with oral sodium amylobarbitone. In the estimated 11th week of pregnancy lithium carbonate treatment was started and her psychiatric condition steadily improved. After discussion with the medical staff, the patient, by then in a rational state of mind, decided to proceed with the pregnancy and she was discharged to outpatient care. Pregnancy was uncomplicated and a healthy baby (3850 g) was delivered with Haig-Ferguson forceps 13 hours after the onset of labour.



Concentrations of lithium detected in maternal and neonatal serum, amniotic fluid (obtained six hours before delivery) and umbilical cord blood.
Conversion: SI to traditional units: Lithium: 1 mmol/l = 1 mEq/l.

The lithium concentration in umbilical cord blood closely reflected the maternal serum concentration, but that found in amniotic fluid was higher than any other value (see fig). Serum concentrations in the infant remained static over the first three days despite good oral fluid intake and thereafter fell steadily to zero by the 13th day, giving an approximate serum half life for lithium in the neonate of 96 hours. Serum electrolytes, calcium, phosphate, and routine haematological values were all normal. Thyroxine levels in umbilical cord blood and in neonatal blood on the first and fourth days were normal, as were neonatal thyrotrophin levels at day 4. Femoral epiphyseal *x*-ray films, Echo encephalogram, and electrocardiogram performed on day 4 were also normal. Minor vomiting and irritability were observed from the fourth to the seventh days.

Comment

The close similarity of lithium concentrations in maternal, umbilical, and neonatal serum confirms that no placental barrier exists to the free diffusion of lithium ions.[3] The high lithium concentrations in amniotic fluid probably reflect fetal urinary excretion. Since lithium inhibits adenylate cyclase, it was interesting to find no evidence of thyroid or parathyroid dysfunction in the newborn infant. The nursing staff thought this baby abnormally irritable while the serum lithium concentration was rapidly falling, and it is tempting to speculate that this behavioural abnormality resulted from withdrawing an agent to which the baby had been exposed for most of its intrauterine life.

Further pregnancies must be recorded in detail before any general statement may be made about the safety of lithium in pregnancy. Transmembrane electrolyte distribution in fetal mammalian brain tissue differs from that of the adult,[4] thus the effect of lithium upon important ionic distributions in the developing brain should be further assessed.

We are indebted to Dr F Cockburn and to the staff of the Simpson Memorial Maternity Pavilion.

[1] Weinstein, M R, and Goldfield, M D, *Lithium Research and Therapy*, ed F N Johnson. New York, Academic Press, 1975.
[2] Nora, J J, Nora, A H, and Toews, W H, *Lancet*, 1974, **2**, 594.
[3] Weinstein, M R, and Goldfield, M D, *Diseases of the Nervous System*, 1969, suppl 30, 828.
[4] Bradbury, M W B, *et al*, *Journal of Physiology*, 1972, **227**, 591.

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